

CLAIMS

What is claimed:

1. An umbilical cord sampling device comprising at least one sampling needle
operatively connected to a removable cassette containing a sampling reservoir.
5
2. The umbilical cord sampling device of claim 1 further comprising a roller.
3. The umbilical cord sampling device of claim 1 wherein at least one sampling
needle is positionable relative to an umbilical cord segment within the device.
10
4. The umbilical cord sampling device of claim 1 further comprising a system
including a docking unit that mates with the removable cassette.
5. The umbilical cord sampling system of claim 4 further comprising an analyzer.
15
6. The umbilical cord sampling system of claim 4 further comprising a printer.
7. The umbilical cord sampling system of claim 4 further comprising a bar code
reader.
20
8. The umbilical cord sampling system of claim 4 further comprising a magnetic
card reader.
9. The umbilical cord sampling system of claim 5 wherein the analyzer is in
operative communication with a computer.
25
10. The device of claim 1 wherein the device comprises a base having a cavity in
which an umbilical cord segment is positioned and a needle assembly housing.

11. The device of claim 1 further comprising a plurality of sampling needles.
12. The device of claim 1 further comprising a sensor.
- 5 13. The device of claim 12 wherein the sensor comprises a pH sensor.
14. The device of claim 1 further comprising a meter.
- 10 15. A method for determining the values of physiologically relevant parameters of a biological fluid, comprising the steps of:
- providing an umbilical cord sampling device having at least one sampling needle operatively connected to at least one sampling reservoir;
- placing an umbilical cord segment in the umbilical cord sampling device;
- 15 16. penetrating a fluid-containing lumen of the umbilical cord segment with a sampling needle;
- collecting the fluid in a sampling reservoir; and
- analyzing the collected fluid to determine values of physiological parameters.
- 20 17. The method of claim 15 further comprising contacting the fluid with a sensor.
18. The method of claim 15 further comprising measuring a blood analyte.
- 25 19. The method of claim 15 further comprising measuring a blood gas value.
20. The method of claim 15 further comprising measuring blood pH.
20. The method of claim 15 further comprising measuring glucose.

21. The method of claim 15 further comprising communicating values to a computer.